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(54) Extended drug delivery of small, water-soluble molecules.

(57) A polymeric device releasing biologically active, water-soluble materials having a molecular weight of less than 1000 in a controlled, continuous and linear manner over an extended period of time. Insoluble polymer matrixes can be defined in any shape, size and drug content. When applied to medical use, biocompatible polymers are used so that the device is implantable. The device is made by modifying prior art devices based on diffusion of fluid into a polymeric matrix containing dispersed biologically active molecules to yield a polymer device which can be placed in a fluid environment, so that fluid is absorbed by the device and the water soluble molecules diffuse into the fluid environment, leaving behind pores and channels, where the rate of diffusion is limited by an impermeable coating over a portion of the polymeric matrix and/or by adjusting the drug loading to produce the number and size of pores and channels to the surface of the polymeric matrix yielding the desired release rate of the biologically active molecules. The device is characterized by several distinguishing features: a mechanism usually associated with macromolecular release which is applicable to small, water soluble molecules and controlled, long term linear release of large drug quantities.

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PARTIAL EUROPEAN SEARCH REPORT

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

Application number

EP 90 11 6768

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X,D	EP-A-0 290 891 (B. SABEL) * Claims 7,8,10,13 *	1-4	A 61 K 9/22
X	BIOLOGICAL ABSTRACTS/RRM, abstract no. 36029986; S.R. WINN et al.: "Intrastriatal implantation of an encapsulated L dopa releasing polymer reverses experimental parkinsonism in rats", & SOC. NEUROSCI. ABSTR. 14 (2), 1988, page 1311 * Abstract *	1-4	
X,P	DIALOG 07537500, Medline abstract 91056500; B.A. SABEL et al.: "Levodopa delivery from controlled-release polymer matrix", & J. PHARMACOL. ./.		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

A 61 K

INCOMPLETE SEARCH

The Search Division considers that the present European patent application does not comply with the provisions of the European Patent Convention to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of some of the claims.

Claims searched completely:

Claims searched incompletely: 1-4

Claims not searched: 5-9

Reason for the limitation of the search:

Claims 5-9:
Method for treatment of the human or animal body by surgery or therapy (See art. 52(4) of the European Patent Convention)

For further information see sheet -C-

Place of search	Date of completion of the search	Examiner
THE HAGUE	26-02-1991	LEHERTE

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	EXP. THER., Nov. 1990, 225 (2), pages 914-922 * Abstract *	1-4	
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X	EP-A-0 326 727 (INT. MINERALS AND CORP.) * Column 2, lines 36-43; column 3, lines 12-49 *	1-4	
	--		TECHNICAL FIELDS SEARCHED (Int Cl 4)
A	EP-A-0 303 306 (AKZO N.V.) * Claim 1 *	1-4	

Claims 1-4: In view of reasons of economy it is impossible to perform a search for a "biologically active, low molecular weight, water soluble molecule (claim 1), selected from the groups of inorganic and organic molecules (claim 4)". Therefore the search has been restricted to L-dopa and depamine which are the compounds supported by the description. (See E.P.C. Art 84; and Guidelines for Examination in the E.P.O.: Part B, chapter III, page 6, 3.7).